

Amendments to the Specification:

Please replace paragraph [38] with the following amended paragraph:

[38] The bitmap-based free-pointer-pool 200 includes a first bitmap 230 and a second bitmap 260. The first bitmap 230, which may also be referred to herein as the “memory segment bitmap 230,” includes segment bit-flags corresponding to each of the 4K memory segments in the memory 210. For example a first segment bit-flag 231 corresponds to the first memory segment of the first memory block 221 of the memory 210, and a sixty-fourth segment bit-flag 232 corresponds to the sixty-fourth memory segment in the first memory block 221 of the memory 210. Similarly, as will be referenced in later examples, a 127th segment bit-flag 233 corresponds to the 127th memory segment of the memory 210, which is also the sixty-third memory segment of the second memory block ~~221~~222 of the memory 210; a 190th segment bit-flag 234 corresponds to the 190th memory segment of the memory 210, which is also the sixty-second memory segment of the third memory block 223 of the memory 210; a 194th segment bit-flag 235 corresponds to the 194th memory segment of the memory 210, which is also the second memory segment of the fourth memory block 224 of the memory 210; and a 3096th segment bit-flag 236 corresponds to the 3096th memory segment of the memory 210, which is also the second memory segment of the sixty-second memory block 226 of the memory 210.